CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

Vol. IX OCTOBER, 1937 No. 4

Euphorbia polygona showing the parasite *Viscum minimum*. See page 51

CACTUS AND SUCCULENT JOURNAL

Published and Owned by the Cactus and Succulent Society of America, Inc., Box 101, Pasadena, California. A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. Subscription $3.00 per year. Foreign $3.00 per year by international money order. Membership in the Cactus Society free with subscription. Mail application to SCOTT HASELTON, *Editor*, Box 101, Pasadena, Calif. *Editorial Staff*: THE ENTIRE SOCIETY. Entered as Second Class Matter at Pasadena, Calif., under act of March 3, 1879.

Vol. IX OCTOBER, 1937 No. 4

PRESIDENT'S MESSAGE

It is a great pleasure to welcome two new Cactus & Succulent Societies as Affiliates. The Executive Board has approved the applications of the Cactus & Succulent Society of Australia and the Cactus & Succulent Society of Milwaukee.

The Australian Society is the first foreign society to be received into fellowship and we trust it is the fore runner of many more. This is a strong society with a numerous and enthusiastic membership distributed throughout the southern continent.

There are so many enthusiasts in and around Milwaukee that an organization was imperative and their first thought after organization was affiliation with our national body.

To both Societies we say, "Welcome, thrice Welcome! May your years of association with us be long and pleasant."

HOWARD E. GATES.

G. A. Frick, a life long friend of the late Wright Pierce, states that the picture of the Cactus Wrens on the cover of the July JOURNAL should have been entitled "A three story flat." Wright could never explain why these Cactus Wrens built several nests and yet occupied only one.

While mining in the Catalina mountains Mr. Frick saw a family of Wrens build a nest in the mouth of a tunnel and blasting did not cause them to abandon their home. An interesting story might be told of these birds who are at home among the cactus spines.

The Milwaukee Society reports a *Hylocereus undatus* with 21 flowers, some measuring 14 inches across. This plant belongs to Mr. Rayner. Wisconsin is fast becoming a cactus minded state and the enthusiasm is shown when 40 to 50 people gather for an evening party to enjoy one of these night flowering plants.

CORRECTION

Vol. IX, No. 3, Sept., 1937. Transpose the captions of the cuts on pages 36 and 38. We regret these misplaced captions on this valued contribution by Mr. Peebles. Two more scientific articles will soon appear in the JOURNAL: "A new Arizona Opuntia and related species in series Tortispinae" and "A new Arizona species of Opuntia, series Dillenianae." JOURNAL readers have expressed their appreciation of Mr. Peebles' work.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912. Of Cactus and Succulent Journal, published monthly at Pasadena, for October, 1937, State of California, County of Los Angeles.

Before me, a notary in and for the State and county aforesaid, personally appeared Scott E. Haselton, who, having been duly sworn according to law, deposes and says that he is the Editor-Publisher of the CACTUS AND SUCCULENT JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

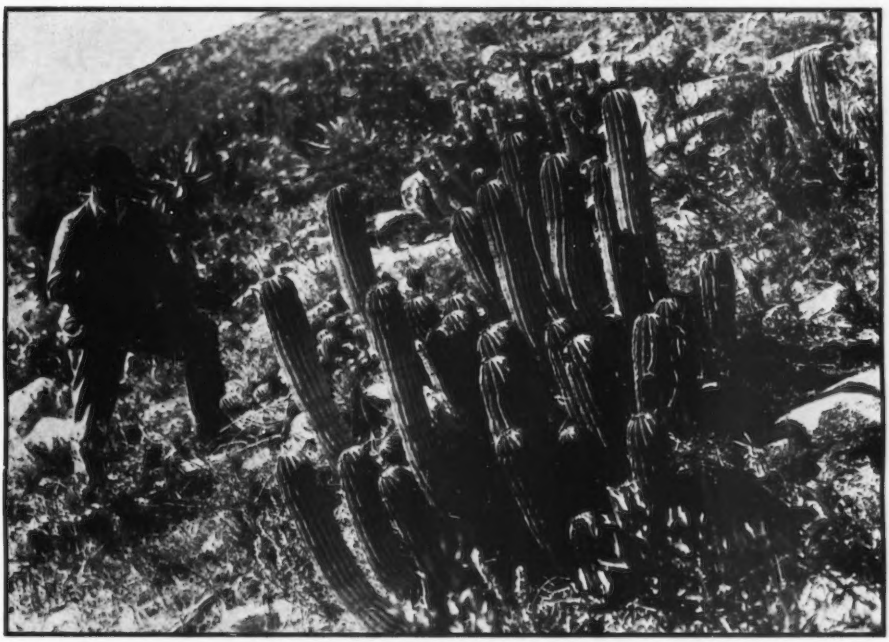
1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Scott E. Haselton, Box 101, Pasadena.

2. That the owner is: CACTUS AND SUCCULENT SOCIETY OF AMERICA, INC. and leased to SCOTT E. HASELTON, who created and published said magazine to date.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None. Cactus and Succulent Society is a non-profit organization and issue no stock.

SCOTT E. HASELTON.

Sworn to and subscribed before me this 23 day of June, 1937, GALE VAN DEVENTER. (My commission expires April 23, 1941).



Euphorbia polygona on hillside, Port Elizabeth, South Africa

Euphorbias of Port Elizabeth

By F. R. LONG, A.H.R.H.S.

The bare hills overlooking the harbour of Port Elizabeth are rapidly being given over to the builder to satisfy the rapid expansion of the city. The soil here is almost non-existent and the sub-soil is pulverized sand stone overlying solid rock. It is here in the full sun and exposed to the salt sea winds and constant winds from the landward side, growing in the cracks of rocks with their necks in broken rock and little soil that the following species are found: *E. globosa* Sims, *E. stellata* Willd, *E. gorgonis* Berg. and *E. elliptica* Thumb. These four species are found in vast quantities within a few feet of one another. *E. elliptica* is perhaps not quite so plentiful and requires a little more true soil. It will be appreciated that these species can stand all the exposure, but must have perfect drainage. They are also found in more favourable spots where scattered bush gives more protection. I have never heard of a hybrid being found or a plant showing any signs of an intermediate form in spite of the close proximity of their habitat.

E. gorgonis Berg. is often found in hundreds with just the centre of their crowns scooped out by youths in order to get at the latex which I understand forms an excellent bird lime.

E. globosa Sims is sometimes found in such masses that it is difficult not to tread on them, the growth is never more than one inch high although if buried with soil these growths will often elongate to come up to the light. One never finds the monstrosities that are sometimes seen in pots in botanical collections.

E. stellata Willd. is usually beautifully colored to a rich purplish red mottled and veined with green. With the flowers on the edges of the growths, they make very attractive plants. They are not, however, easy to move into cultivation. The swollen irregularly shaped roots are squeezed into all shapes in their efforts to force

Euphorbia meloformis, Aloe humilis, Euphorbia globosa, E. stellata

themselves into the cracks of the split rocks. They are tapering often to 8 inches long by 3 inches broad.

E. elliptica Thumb seems to be a little known species as far as the collector goes judging by the frequent requests for plants that are received. It is by no means so plentiful as the three species mentioned above, but occurs in colonies. Being a stemless, tuberous rooted species only showing out of the ground and moreover having deciduous leaves, it is very hard to locate. This plant, of course, is unisexual.

Another species found in the neighborhood is *E. polygona* Haw. Usually this likes a stony cliff, in full sun and very well drained. Large clumps are sometimes seen 3 feet in height and the habitat extends from the sea shore to many miles inland. In the illustration it will be seen that the nature of the ground is steep and rocky. The smaller plant in front of the main group is *Haworthia herrei.* The minute "Mistletoe" *Viscum minimum* Haw. is sometimes found growing on the sides of the stem of this *Euphorbia.* The red berry of the *Viscum* is many times bigger than the plant proper of this parasite. *E. polygona* does not seem fastidious in its requirements beyond good drainage and full sun. Near to the writer's house is a river bed

with rocky precipitous sides, here are beautiful clumps of *E. polygona* with large cushions of *Haworthia planifolia* var. *cymbiformis* growing alongside.

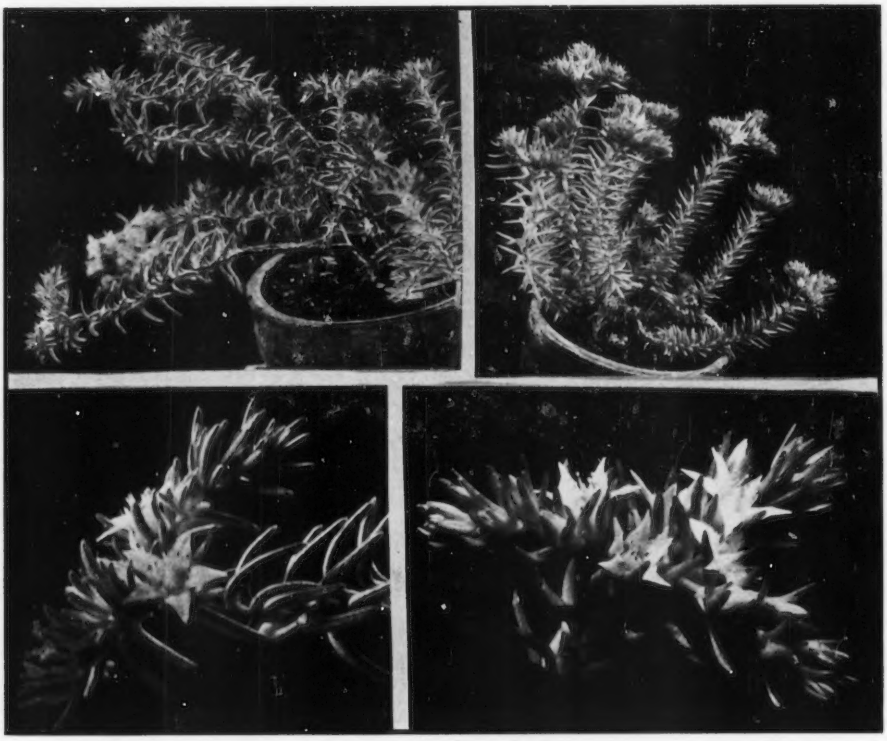
There is yet another species usually found in collections which is a native of the Port Elizabeth district, namely *Euphorbia meloformis* W. This plant is found on hills some 10 miles to the north of the city where the soil is much richer and where there is a limestone formation not very far below the surface. The areas where this species is found are flat, covered in grass and low scrub of one foot or so in height such as *Sutera microphyllum*. In the illustration will be seen a blue flowered Acanthaceous plant, *Ruellia ovata* Thum. growing alongside. *E. meloformis* is not found very far from the coast but some 100 miles inland *E. vallida* is found and further inland still at about 180 miles *E. obesa* is found near Graaff Reinet. It would be interesting to make a close study of the extent of the areas and the rainfall experienced within the habitats of these three somewhat similar species. Another interesting study would be a comparison of the areas where *E. ledienii* Berg. and *E. coerulescens* Haw. are found. The former is found some 20 miles and the latter about 80 miles inland from Port Elizabeth. Where they occur, large stretches of them, sometimes miles long, are a feature of the flora.

Enough has been said to indicate to the reader that the country surrounding Port Elizabeth is rich in Euphorbia species.

There is no clearly defined summer or winter rainy season in the area where the above-mentioned species of Euphorbias are found. Some winters are definitey wet, others are certainly dry, the same remark applies to the summer season, except that at no time are constant rains experienced. Cultivators will therefore gather that it is not necessary to be fussy with the watering can because there is no definite resting season to observe. Further, there are no frosts in this area although the ground temperature on these hills on rare occasions would reach say 39° or 40° Farh. Sun temperatures at ground level reach as high as 107° in the summer. There is little shade afforded by other growth such as grass or shrubby plants. High and drying winds are of frequent occurrence. Cultivators will, therefore, realize the hard conditions these Euphorbias have to put up with when in the wild state. I trust therefore that these remarks will be of some assistance to the collector of this fascinating group of plants.

EDITOR'S NOTE: Although we regret that the EUPHORBIA REVIEW has ceased publication we will endeavor to fill the need for Euphorbia material. Interest in this group of plants will increase with the available literature which will make them better known. The most highly valued articles are those from the field and JOURNAL readers thank Mr. Long for this interesting contribution from South Africa.

Euphorbia globosa *Euphorbia meloformis, E. globosa*



UPPER LEFT: 1a. *Altamiranoa batesii,* app. x 0.4
LOWER LEFT: 1b. *Altamiranoa batesii,* flowers, app. x 2.
UPPER RIGHT: 2a. *Altamiranoa mexicana,* app. 0.4
LOWER RIGHT: 2b. *Altamiranoa mexicana,* flowe.s, app. x 2.

Illustrations in the Crassulaceae

By ERIC WALTHER, *Botanist,* Golden Gate Park

1. **Altamiranoa mexicana** (Schlecht.) Rose.
2. **Altamiranoa batesii** (Hemsl.) Rose.

Most students of the Family *Crassulaceae* have been puzzled as to the proper allocation of the plants here discussed. Originally they were placed into the genus *Cotyledon* by Hemsley, in the "Diagn. Plant. Nov. & Biolog. Cent. Am."; and by Schlechtendal even into *Umbilicus.* However, we have long felt that their nearest affinities were to be found with *Sedum;* and the genus, as well as *Villadia* and *Lenophyllum,* should be transferred to the Subfamily *Sedoideae,* being perhaps mere Sections of the polymorphic genus *Sedum.* In their *Sedum*-like leaves, annual or biennial shoots, and small, whitish flowers borne in terminal inflorescences the genera mentioned have certainly very little in common with *Echeveria.*

In a previous issue (*1) we have pictured two species of *Villadia,* and here submit pictures of two species of *Altamiranoa.* The genus was established in 1903 by Dr. Rose, who named it in honor of Dr. F. Altamirano, late Director of the Instituto Medico Nacional, Mexico City, and in-

(*1:: Cactus & Succ. Journal, 8.9:151, March, 1937).

tended it to contain those Mexican Sedoid *Crassulaceae* with flowers having petals connate at base, and more or less spreading above, much smaller than in *Echeveria,* and always arranged in secund-branched cymes. If this secund nature of the inflorescence, by which the genus differs from *Villadia,* were applied with equal weight to *Echeveria* it would result in splitting the latter genus into two halves of nearly even size and importance.

While estimating the possible bearing of such characters on the derivation of *Echeveria* from a more primitive prototype it may be recalled that *Altamiranoa* is the sole member of the family having a similar range, from Northern Mexico to South America.

This coincidence in habitat goes so far that we found scarcely one *Echeveria* growing wild in Mexico without also finding in its close proximity a species of *Altamiranoa.* In the vicinity of Mexico City the most widely spread species seems to be *A. batesii,* which ranges widely through the Serrania de Ajusco, southwest of the city, and was collected by us in numerous spots, the plants here pictured having come from the Barranca de Chapultepec.

The species is characterized by its spreading habit, terete, slightly papillose leaves, bracts and sepals and the rotately-spreading petals. In our plants the sepals appear to be longer than in the plate in the "Biol. Cent. Amer.", but the difference is a minor one. This species was selected by Rose as the official type of the genus, but the first species known to science through legitimate publication was Schlechtendal's *Umbilicus mexicana,* now *Altamiranoa,* originally collected near Mineral del Monte near Pachuca. Our plants were gathered at Pueblo Nuevo, where they were found quite close to *Echeveria secunda.*

A. mexicana differs sufficiently from the former species in its thinner, distinctly flattened leaves and sepals, which are scarcely papillose, in its more strongly ascending to erect shoots, and the outer portion of the petals becoming often clearly reflexed at full anthesis.

Perhaps even more commonly cultivated in our local collections is a third species, usually under the name of *A. elongata* Rose. We saw nothing of the latter species near Pachuca whence it is said to have come and are unable to express any opinion on just how it differs from *A. jurgensenii* (Hemsl.) Rose.

Culturally, these plants may be classed with the white-flowered Sedums, will thrive in any well-drained spot not too hot and dry in summer, and should serve as useful foils for the more stiffly regular Echeverias.

NOTE

An article entitled "Observations on Frost Resistance" (this JOURNAL, Vol. VIII, No. 9, March, 1937, issue) was seriously lacking in the essential fact of actual minimum temperatures. A number of people who have communicated with me, referred to this shortcoming, while expressing much interest in the comparisons given. In particular, W. V. Turnage of the Carnegie Institution Desert Laboratory at Tucson felt this lack so strongly that he went so far as to secure, through the kindness of Mr. Young of the U. S. Weather Bureau, a copy of the January minimum record at its Downey station and request its publication in the JOURNAL. This station is approximately five miles distant and the temperatures probably corresponded closely with those on which the plant data were based.

U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU

Station, *Downey, California*
Data, *Minimum Temp. at Downey, January, 1937*

Date	*Temp.*	*Date*	*Temp.*
1	30.5	17	26.5
2	——	18	27.0
3	30.0	19	33.0
4	26.5	20	24.0
5	33.0	21	22.0
6	——	22	22.5
7	27.0	23	22.0
8	25.0	24	25.0
9	22.5	25	31.5
10	27.3	26	27.0
11	25.7	27	31.0
12	——	28	——
13	32.0	29	——
14	29.5	30	——
15	28.2	31	32.0
16	——		

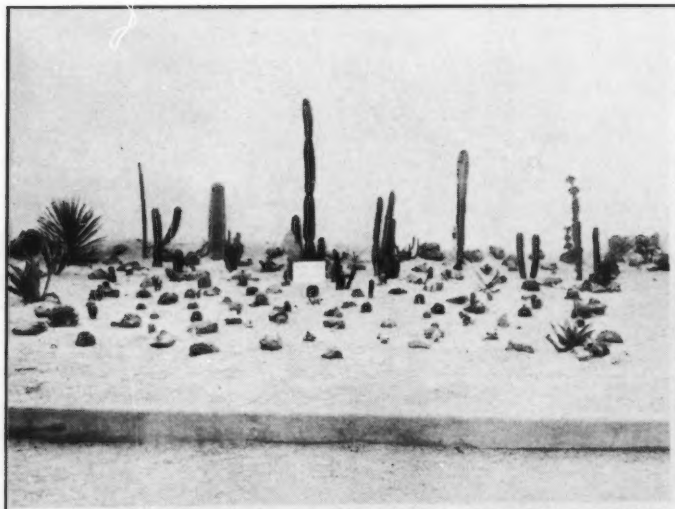
This would indicate that a minimum temperature of 22°F. is the correct basis for reference. It must be remembered that freezing temperatures began about 5 p. m. and were prolonged till after noon on Jan. 21 through 23, inclusive.

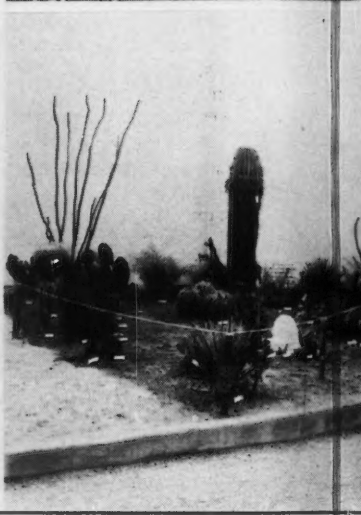
This year four minimum thereometers will be distributed around my place and strictly accurate data will be available in case of any future severe freeze. However, I would prefer unfrozen plants to further data. Mr. Turnage's interest is very much appreciated. R. W. POINDEXTER.

The JOURNAL has improved wonderfully during the past two years and I am particularly pleased with the pictorial issues. The JOURNAL is the only publication in which I can find illustrations of many of the plants in which I am interested.

With best wishes for continued success.

W. ARTHUR STEEL, Canada.





ABOVE: San Gabriel Club
BELOW: Ervin Strong's exhibit

ABOVE: Pres. Howard
BELOW: Southwest

ANNUAL CACT

The Ninth Annual Show of the CACTUS AND SUCCULENT SOCIETY OF AMERICA was held, as scheduled, in conjunction with the Los Angeles County Fair. The exhibits, while few, upheld past show standards.

President Gates put on a competitive-inviting exhibit. He received first awards for best collection of cactus and succulents, best landscape exhibit, best collection of cactus, and best collection of succulents with eight minor firsts and one third.

With a desert collection, the Southwest Cactus Club took first in the newly created club class; the San Gabriel Club showed rare plants and ran a close second.

Seed Kelly, while not showing his recent discovery, put on a very fine display of mature

Howard E. Gates himself
Southwest Cactus Club

ABOVE: Exhibit of R. W. Kelly
BELOW: Part of Howard E. Gates' prize winners

CACTUS SHOW

plants and received awards for second best collection of cactus, second best collection of Mams. and first for his much looked at *Cactus melocactides.*

Mr. Strong showed a collection of 200 plants in the Coryphanthanae subtribe. His exhibit, an amateur entry, received first for best collection of cactus, and second for landscaped exhibit with twelve minor firsts and a third.

Mrs. Stoddard's entry of a palm tree boat, filled with small cactus and succulents was regarded with much interest and received second for miniature landscape. Her exhibit received another second and a first award.

VERA HIGGINS' SUCCULENT PLANTS SHOWN IN LONDON

EDITOR'S NOTE: *The author of this article has been a member of the American Society from its inception and her kind encouragement has continued to serve as an inspiration. Mrs. Higgins has not only maintained an active part in the English Cactus Journal, but she has written several books on Cactus. "The Study of Cacti" was published in 1933 and has been one of the most popular books presented to the Cactus world.*

At a recent fortnightly meeting of the Royal Horticultural Society, I gave a lecture on "Desert Plants" and, to illustrate this, my husband and I put up an exhibit designed to show how large a number of plant families have succulent representatives. The accompanying photograph gives a general view of the group, to which the Council of the Society awarded a Silver-Gilt Banksian Medal. In the group we included 325 different species belonging to 125 genera from 18 families. The exhibit was divided into two sections, that nearest the camera containing species from the New World while the plants beyond the white line, just appearing in the photograph, are natives of the Old World, principally of South Africa.

In the centre were a number of Euphorbias, amongst them *E. neriifolia, E. canariensis* and *E. grandicornis;* to the right of the Euphorbias was a large plant of *Cissus juttae,* recognizable in the photograph, which attracted considerable attention; earlier in the year the plant carried several bunches of "grapes." *On the extreme right* were a number of Aloes, Haworthias and Gasterias, whilst in front were typical Mesembryanthemums including Lithops, Conophytums, Faucarias, Titanopsis, Glottiphyllums and many other genera. *To the left of the Euphorbias* were members of the family ASCLEPIADACEAE, climbing Ceropegias, Stapelias, Huernias, Caralluma and other Stapeliads. We are particularly interested in the genus Ceropegia and have now some thirty different species.

In the New World section was a small selection of representative Cacti, with Agaves, Dudleyas, Echeverias, a fair-sized plant of *Idria columnaris,* the Living Telegraph Pole, and American Euphorbias.

In England these plants are all grown under glass; some can be planted out during the summer months but, owing to our mild damp winters, few succulents can be safely left out all the year round. Our own collection now contains some 1500 different species; of these the greater number are Mesembryanthemums, many of which are grown in a large frame, the pots plunged in ash through which electric soil heating cables run; we find that a high temperature is not required and the extra ventilation possible in a frame, as compared with a greenhouse, is very desirable. We also have some 350 species of Cacti but, as we are only twelve miles from London, the air is dirty and the white-haired species cannot be kept clean, whilst the skin in all cases must get a thin film of soot so that we do not find these plants grow so well with us as they do near the coast or in cleaner districts; still we get a number flowering each year, including a good plant of *Wilcoxia poselgeri* on its own, curious roots.

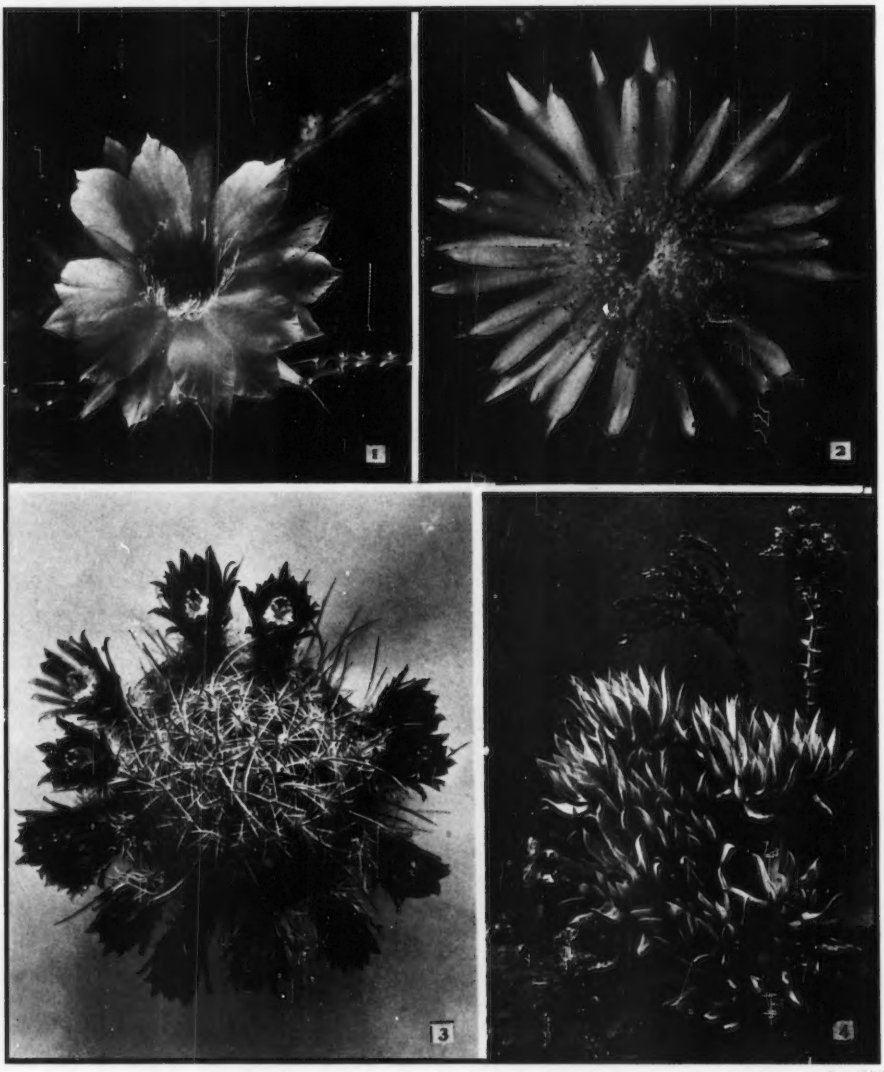
Our object in forming the collection has been to get representatives of as many genera as possible, rather than to specialize in any one genus. We have over 100 succulent Euphorbias, and our Stapeliads include *Pectinaria saxatilis* which flowers regularly, *Duvalia polita, Huernia hystrix* as well as better known Stapeliads. Aloes are, on the whole, rather large to accomodate and we must confine ourselves to the smaller types, but we have a fair number of Haworthias.

The family CRASSULACEAE is quite well represented; *Kalanchoes are very varied and all attractive;* some of the Crassulas are apt to be straggly in growth, but such species as *Crassula mesembryanthemopsis* with its close little rosettes of cylindrical, grey leaves, are very attractive. Other genera of which we have representatives are *Senecio* (including *Kleinia*), *Idria, Ibervillea, Pterodiscus, Cissus, Oxalis* and *Jatropha.*

One of our houses is electrically heated, the temperature being regulated by thermostat to a *minimum of 45°F; the CRASSULACEAE and* Mesembryanthemums, such as the Lithops and *Conophytums, are kept here. The other is heated* by the more usual method of hot water pipes, but a temperature between 45° and 50°F. is all that is aimed at. In foggy weather all ventilators are closed, but otherwise air is given whenever possible. Even in summer no shading is used on the roof, but some species which do not like full sun all day are put in the shade of other plants.

Considering the different parts of the earth from which these plants come, it is wonderful that so many can be grown together under similar conditions. Experience seems to show that the chief essential in growing succulent plants is the proper regulation of the water supply; the resting period must be observed at the correct time of year, then the cultivation of succulents is comparatively easy.

VERA HIGGINS.



1. *Harrisia martini*
2. *Acanthocereus pentagonus*
3. *Echinocereus chloranthus*
4. *Dudleya candida*

Photos by the late H. Wm. Menke. No. 4 courtesy Los Angeles Museum.

CARE OF CACTI IN WINTER

Summary of Lecture Given by
MR. S. TIVEY, *Vice-President*
THE CACTUS AND SUCCULENT SOCIETY
OF AUSTRALIA

It is of little use trying to do much with cacti in the winter months. Therefore, the wintering of cacti really begins in the summer and autumn.

It is almost impossible to keep plants alive through the cold, damp, sunless days of winter if they have been neglected during their growing season.

All cacti are succulent plants, and store up enough moisture to keep themselves alive during the resting season. This resting period is winter time, but not winter as we in Victoria know it.

Most cacti are accustomed to cold, but not cold and wet at the same time. Winter on the desert where they grow is quite dry. Therefore keep your plants as dry as possible, say from the end of May to the middle of September.

During this period do not disturb them, for, owing to their succulent nature, rot easily sets in and your plant is gone before you know it is affected.

Inspect your plants daily. If a plant is not doing as well as it should, take it out of the pot and shake all the soil from the roots. If the roots are affected by mealy bug, wash them clean, then dip them in weak nicotine sulphate, dry gently and replant in a clean pot, using fresh soil and crocks.

Turn the pots round once a week, so that the plant can get a fair share of sun all around it. Take up the pots from time to time and inspect the drain hole and the rim of the pot, as very often the eggs of mealy bug are deposited in these places.

When planting cacti on an inside rockery, do not plant them near succulent plants which need watering during winter.

If you find it necessary to lift a plant in the winter, do not replant for a few days; then plant in dry sandy loam.

Spraying in winter for insect pests is not advisable. A better method is to fumigate with nicotine, using a small spirit stove over which is placed a tin lid with about half an ounce of nicotine sulphate. This will kill any insects in a space of 2000 square feet. For a larger house use more nicotine sulphate.

Those who grow plants on outside rockeries must first be sure that the rockery is properly built and free drainage provided. If, however, during the winter, part of the rockery becomes waterlogged, and you do not wish to move the plants, drive a few stakes well down, far enough away from a plant so that the roots will not be injured. Twist the stakes about, then withdraw and fill the hole with broken charcoal.

When planting cacti out on the rockery, see that they are away from drips from other larger succulents. Get rid of all pests before winter sets in. Snails and slaters can do a lot of damage to plants during the winter, and very often cause them to rot.

A small rockery can be kept fairly dry in winter by placing a tent fly over it, so that it can be removed on sunny days. This is impossible however, with a large rockery; therefore I would advise covering individual plants with jars, tins, or any other effective covering which can be easily removed.

EDITOR'S NOTE: It is interesting to note that the seasons in Australia are the reverse of our seasons in the U. S. A.

BOOK REVIEW

"Costicnopalxochitl Quezaltec"—*Epiphyllum ackermannii*—the fanciest flowering cactus in all Mexico is according to "Las Cactaceas de Mexico" by Miss Helia Bravo H. of the University of Mexico. This name is given in Chapter 3 of her book: Cactus Among the Ancient Mexicans.

Chapter 1 is an introduction.

Chapter 2 is an excellent resume of the historical writings on cactus.

Chapter 4 is on the structure of the plants, physically and chemically.

Chapter 5 is an essay on evolutionary distribution of the cactus.

The 72 pages of these five chapters are of sufficient interest that they should be translated into English for our benefit. Lack of knowledge of Spanish does not seriously handicap the readers of this book, though, for example: "Sespitosas, formando grupos de mas de 1 metro de diametro" is easily understood with the following lesson in Spanish: "de" means "of", "mas" means "more"; so the quoted description in English is "Sespitose, forming groups of more than 1 meter of diameter."

The last 682 pages are illustrations and descriptions of the native Mexican cactus.

The first thing to do on receipt of your copy of "Mexican Cactus" is to send it to the bookbinder. You will want to go through it frequently. Published through the Department of Social Action of the National University as it is intended for the general public of Mexico and it is manufactured to sell as cheaply as possible.

Binding is in paper and the index fell out of mine during the first look. To get a copy send $5.00 U. S. to the Cactus Society Office or buy Mexican Pesos and send 18 of them direct to the Universidad.

Unfortunately many excellent photographs suffered in their reproduction because of poor press work, but even the best printing could not take the bugs off *Mamillopsis senilis* which is affected the same as our cultivated specimens. The Britton and Rose system of classification is followed with few exceptions, the principal being *Roseocactus* in addition to *Areocarpus, Stenocactus* for *Echinofossulocactus* and *Mammillaria.*

From the German authors many species of *Coryphantha* and *Mammillaria* are included that have been described since Britton and Rose, and a number of Mexican species described recently by Gonzales Arenas and Gonzales Ortega from Northern and Central Mexico are shown. These authors have several new species of *Echinocereus* and *Opuntia.*

The principal omission is the reviewer's species named in honor of the author, *Opuntia bravoana,* which didn't even get mentioned.

The book has 325 illustrations. The finest of these is the columnar cactus group of *Cephalocereus* and *Pachycereus.*

All together it is a very worthwhile work that anyone can use. Pages are 7½x10 inches, 754 of them, enough to occupy you for many of the coming winter nights.

E. M. BAXTER.

EDITOR'S NOTE: There seems to be some delay in the delivery of these books, but we hope to receive a supply in the near future. This is one of the recommended books for every cactus library and Miss Bravo had made a most valuable contribution to the cactus world.

S. E. H.

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